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AUTHOR Freitag, Carl B.
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ABSTRACT

The purpose of this three-year project is to implement elementary music programs in the public schools of the region by operating an exemplary center in music education, and by establishing procedural patterns for school systems to follow. Standardized and locally constructed tests and surveys show rapid progress of students and significant attitude change of teachers, administrators and parents. The methods of evaluating the objectives range from simple to nearly impossible. The definitive evaluation of project success will depend on the increase in authorized and funded music teacher positions. (Author)

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Instrumentation, Data Collection and Formative Evaluation Problems of an Innovative Program in Music Instruction

Carl B. Freitag

Middle Tennessee State University

Paper delivered at the American Educational Research Association, Chicago, April, 1974.

Abstract

The purpose of the three year project is to implement elementary music programs in the public schools of the region by operating an exemplary center in music education and establishing procedural patterns for school systems to follow. Standardized and locally constructed tests and surveys show rapid progress of students and significant attitude change of teachers, administrators and parents. The problems of evaluating the objectives range from simple to near impossible. The definitive evaluation of project success will depend on the increase in authorized and funded music teacher positions within the project region.

Introduction

This paper reports on the problems involved in the process of formative evaluation in a music program in Region Eight of Tennessee. The overall purpose of the project is to bring about significant constructive change in the scope and operation of elementary music programs in the public schools of that region. The goals are to establish and operate an exemplary center in music education and to establish procedural patterns for school systems to follow in their commitment to provide quality instructional programs in music. This Implementing Elementary Music Improvement (I.E.M.I.) is now in its third and final year. It is funded by E.S.E.A. Title III through the Tennessee State Department of Education.

The I.E.M.I. project is so extensive this paper will report on only some of the evaluation problems. As usual, formulating testable criteria for the several objectives of the project has been a problem. Also, internal formative evaluation was not a part of the original proposal and was added in the second year of the project. Fortunately, base line data were collected and are being used in the evaluative process.

As reported by Grobman (1970), tests can touch on only some of the aspects of evaluation. In fact, evaluation is equated with testing but the use of standardized tests does not guarantee an adequate evaluation. Seldom does a nationally standardized test measure local objectives, and this is certainly true in this project.

The technique used primarily by the project personnel for music instruction is called Orff-Schulwerk. This system, described by Reimer, 1970; Walter, 1969; and Woodruff, 1970, is an innovative method of providing young children with the basic fundamentals of music. It is concerned with the coordination of movement with free expression and is designed to begin very early before a child is confronted with traditional instruction on regular musical instruments.

The purposes and objectives of the project are as follows:

Purpose 1 to establish and operate an exemplary center in music education for children in the elementary grades.

Objectives:

1. In the cognitive domain each student will gain the knowledge needed to achieve the behavioral items

of the Music Behavioral Expectations Guide List (MBEGL) for his grade level.

2. In the affective domain each student will acquire value of participation in music and will respond positively toward music and toward the music instructional program.
3. In the psychomotor domain each student will develop the physical skills needed to achieve the behavioral items of the MBEGL for his grade level.

Purpose 2 to establish procedural patterns for school systems to follow in their commitment to provide quality instructional programs in music at the elementary school level.

Objectives:

1. Music teachers and classroom teachers possessing musical backgrounds and participating in the in-service education sessions will acquire knowledge and skills sufficient to begin programs of similar intent and extent.
2. Through in-service education sessions, classroom teachers with limited musical backgrounds will develop musical skills and acquire understandings of the purposes of a good music program to the

extent that they will be sympathetic to such programs, assist in the establishment of such programs within their respective schools and school systems, and incorporate valid concepts of music in their classroom teaching.

3. Administrators participating in the in-service education sessions will acquire an understanding of the intent of the project, value the benefits of a good program of music for children and will assist in setting up similar programs in their school systems.
4. Children, their teachers, parents and community will acquire an understanding of the nature of a general-vocal music program, the teaching procedures, material and equipment employed by the project.
5. Children, their teachers, parents and community will become aware of the potential impact of an active general-vocal music program by having opportunities to see, hear and meet visiting performing musicians.

Objective added to the last year of the project:

Classroom teachers in the project region in grades K-3 and grades 4-6 will present music instruction to their students using a program structure suggested by the project.

Through this in-service effort, classroom teachers with limited musical backgrounds will develop musical skills and acquire understandings of the purposes of a good music program to the extent that they will be sympathetic to such programs, assist in the establishment of such programs within their respective schools and school systems and incorporate valid concepts of music in their classroom teaching.

Tests

The primary method of assessing cognitive change in music ability of the students in the demonstration school was repeated administrations of the Music Achievement Test (MAT). (Colwell, 1969). The MAT consists of four tests each having several sub-tests. It provides base line and growth data in several major areas thought important for a musically knowledgable person.

The manual reports that a score on the MAT will provide the following information on each student:

(1) A measure of the extent to which a pupil has profited from past musical instruction.

(2) A measure of the quality of his musical instruction.

(3) An indication of the extent to which the pupil is likely to profit from further musical instruction.

The statistical data developed by the standardization process provides normative data for students in grades four through twelve.

Only three of the four tests of the MAT have been used. Test No. 1 covers the areas of pitch, interval and meter discriminations. Test No. 2 covers the areas of major-minor mode discrimination, feeling for tonal center and auditory-visual discrimination. Test No. 3 covers the areas of tonal memory, and recognition of melody, pitch and musical instruments. Test No. 4, which has not been administered, covers the areas of musical style, auditory—visual discrimination, chord recognition, and cadence recognition.

The administration of the MAT is accomplished using published answer sheets and recordings. Answer sheets are hand scored using templates.

These annual administrations of the MAT have been the most precise data collected thus far. The gains reported are for 2 separate groups. When the project began, the 4th and 5th grades in the demonstration school started

at the same time. We were able, then, to study the effects of early and late starting of music instruction.

Table 1 shows the 3 administrations of the MAT for group 1. Group 1 includes those students who started their music instruction in the 4th grade. Table 2 shows the MAT results for Group 2 who started in the 5th grade.

Table 1 shows the average 3 test gain from the 1st to the 2nd year was 15.47. This is contrasted with the average gain of the standardized national sample of 9.00. Progress continued during the 2nd year but not at the same accelerated rate.

Table 2 shows group 2 also growing at an accelerated rate and closing on the means of the national sample. The 3 test gain for the 2 year period was 23.96 for the students in the demonstration school as opposed to the national average gain of 20.74. As in other educational studies of various grade levels, greater gains were made in the lower than upper grades.

Using the increase in means from year to year as reported in the national norms as a "control" group is not the most desirable situation. However, it does give an indication of "normal growth" in musical achievement. Since the increase in scores from the pretest to posttest was

more than the national norm increase, it can be concluded that the musical instruction received by the pupils has resulted in accelerated growth.

The MAT scores from the demonstration school were also compared with other data. MAT tests 1 and 2 were administered to the 5th and 6th grades of 5 other schools. Three schools were from within the project region and had very little organized music instruction. Two other schools were randomly selected from outside the project region.

Table 3 shows a comparison among the National Norms, the demonstration school and 5 other schools in regard to tests 1 and 2 of the MAT. The t-ratios given are for theee differences between the demonstration school and the 5 other schools column.

Within the 5th grade there was not much difference between the demonstration group and the 5 other schools for test 1. However, test 2 showed the demonstration school significantly higher ($p < .01$) than the 5 other schools.

On the 6th grade level, the demonstration school was significantly higher on both tests ($p < .01$).

Test 1 did not show any difference between the groups on the 5th grade level. However, there was a significant difference for test 2 ($p < .05$). Test 2 showed

a significant difference between the groups on both the 5th and 6th grade levels. Perhaps this can be explained by the level of difficulty of each test.

When the 5 other schools were compared, the 3 schools in the project region were superior on both tests, but were not statistically significant. The I.E.M.I. schools had total scores of 75.18 and 75.57 for the 5th and 6th grades respectively while the outside schools had 72.09 and 73.51.

A locally constructed test has been completed which is based on items from the Music Behavioral Expectations Guide List (MBEGL). This document was developed by music educators and the State Department of Education. It lists, in behavioral terms, expected behavior in music education for grades K-6. This MBEGL test includes both a written and performance section and was administered once to a sample of grades 3,4,5, and 6 of the demonstration school.

Table 4 shows the mean scores for each grade and the person or correlations between the part scores and MAT scores. The correlation between the written and performance part of the test was r=.51. The correlations with MAT were substantial with only one exception. The 3rd grade written portion had virtually no relationship with the MAT.

The performance section of the MBEGL test also served as a measure of the psychomotor domain in musical achievement. This was an effort to assess Objective 3 of purpose 1.

Surveys

This section deals with the evaluation of project activities using less precise instruments than were possible with the cognitive domain. Surveys of two touring programs, a monthly music instruction guide and an attitude survey of a provisions statement, as reported here, are only three examples of the many activities of the project.

Two special touring programs were sponsored by the project for the following purposes:

(1) to increase the projects' visibility in the participating communities and throughout Tennessee

(2) to bring to the residents of the project region out-standing examples of music and to expose the residents, especially the children, to exciting, entertaining education experiencies of high musical quality

(3) to stimulate the implementation of a music program, or the improvement of an existing program in the participating school districts.

The special programs were week-long tours of the project region by Miss Ella Jenkins, a folk singer specializing in participatory programs for children, and by the Chicago Childrens Choir, a forty-two member group of boys and girls ages 10-18.

Miss Jenkins performed twice daily among all communities in the project region. The programs were held in the largest available facility. Children were bussed in from all or most schools of the system to provide the largest audience possible. She performed with more than 14,000 children during the week.

Table 5 shows the results of 395 questionnaires administered to teachers during Miss Jenkins' program. The overall percentage of favorable responses to Miss Jenkins was 92.3%. Neutral and negative responses resulted in a percentage of 2.1% while 5.6% of the questions were unanswered.

Table 6 shows the results of 399 returned questionnaires filled out by adult visitors who were not teachers. The high percentage of favorable responses in all counties indicates the consistent high quality of her performances.

The tour by The Chicago Children's Choir took place during the first week of April, 1973. The choir performed in every school district of the project region traveling via chartered bus and making morning and afternoon appear-

ances each day of the week. In addition, the choir sang three evening programs that were open to the general public. A teachers workshop concluded the choir's tour week.

Like Miss Jenkins' tour, the choir was preceded by a pretour information packet and recordings provided by the project. The local schools again bussed students from throughout their systems to central auditoriums. At one program, the choir performed for 4,200 children. Total attendance for the choir's week exceeded 13,500. The communities provided home hospitality for the choir members.

A questionnaire similar to the one used for Miss Jenkins' tour was administered to 377 teachers. The overall percentage of favorable responses for all counties was 85.1%. Responses considered neutral or unfavorable reached 8.4%. Items not answered were 6.5%.

Both tours were evaluated using the survey questionnaires, written comments on the questionnaires, observations by teachers, and attendance records. The statistical summaries of these instruments were limited, but written comments by the respondents were of value. However self-serving these questionnaires seemed to be, they did provide good feedback to the project personnel.

A sub-project within the project is a monthly publication called Music Time. It is composed of small

music lessons that are topical and can be used by regular classroom teachers. Two levels, Primary and Intermediate, are prepared and distributed monthly to instructional personnel in the ten school districts participating in the I.E.M.I. project. The distribution reaches 80 schools, 1,035 teachers, 18 music specialists, 12 supervisors and 10 superintendents. These school personnel have regular contact with more than 33,120 children in grades K-6.

In an effort to determine the value and effectiveness of Music Time, a questionnaire was administered with the November, 1973 bulletin. Table 7 shows the abbreviated results of 254 returned questionnaires.

The simple questions furnished good feedback to the project personnel. The various comments and suggestions also greatly aided in the composition of subsequent issue

Some concrete evidence evaluating the overall effectiveness of the project was gathered after the first year. The administrators (superintendents, supervisors and principals) were asked to endorse a statement of Elementary Music Education Provisions which called for:

(1) The development of a curriculum guide
(2) A specialist approach to instruction
(3) A maximum pupil load per week of 400
(4) A minimum of 75 minutes per week of music instruction
(5) A music room for instruction
(6) Provision of materials and equipment

Of the sixty-seven principals responding, 86.6 percent endorsed the Provisions Statement by answering "Yes" on a questionnaire. The remaining at least "partly" endorsed the statement. About three-quarters reported that they would recommend the hiring of a full time, qualified music teacher and that a music instruction room be assigned. Ninety-four percent reported that they would recommend the acquisition of instruments, equipment and materials.

At the termination of the program another survey will be conducted to determine exactly what each school system plans for the future. Actual positions created, equipment purchased, and number of designated music classrooms will be the most objective evaluation of the success of the project.

Discussion and Summary

The purposes and goals of the project are constantly being evaluated at various levels. Some ill-conceived instruments have been discarded and others have been radically revised. Many activities occured only once and opportunities for improving evaluation instruments were limited.

This project, as others, where people must work together, generated some conflict. Early in the project friction among some personnel almost became critical.

However, adjustments in job assignments greatly alleviated the stress of this problem.

The intrusion of "outsiders" into the rural area of the project region continues to be a problem. The cooperation of superintendents and principals has helped, but some teachers remain suspicious. Job insecurity and competition for classrooms has been a continuing problem. One of the important provisions statements is concerned with the assignment of classrooms for music instruction only and apparently some teachers think they might loose their rooms to a music teacher.

This project demonstrates well the varied means of evaluating educational objectives. The technique of assessing some objectives seems readily apparent and simple to administer while others appear to be impossible to evaluate. The musical abilities of children can be reasonably ascertained with pre and posttests. However, to accurately measure a change in enthusiasm or attitudes toward music instruction in a school system must wait until the completion of the program. If there is a significant increase in authorized and funded music teacher positions at that time, it would be an accurate measure of project success. Meanwhile, principals and superintendents can only promise to approach their school boards for the

additional appropriations. Hopefully the problems and solutions reported in this study will help others who have the task of evaluating similar projects.

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Table 1

Repeated administrations, National norms and gains of Music Achievement Tests, 1, 2, and 3 by grade level for group 1.

TEST 1

	Means			Gains		
Grade	4	5	6	4-5	5-6	4-6
Demo	34.61	38.35	42.43	3.74	4.08	7.82
National	45.02	47.43	50.31	2.41	2.88	5.29

TEST 2

Demo	31.54	37.85	40.89	6.31	3.04	9.35
National	36.86	40.22	43.10	3.36	2.88	6.24

TEST 3

Demo	20.53	25.95	26.81	5.42	.86	6.28
National	19.86	23.09	27.17	3.23	4.08	7.31

THREE TEST TOTAL

Demo	86.68	102.15	110.13	15.47	7.98	23.45
National	101.74	110.74	120.58	9.00	9.84	18.84

Table 2

Repeated administrations, National Norms and gains of Music Achievement Tests 1, 2 and 3 by grade level for Group 2.

	Means			Gains		
Grade	5	6	7	5-6	6-7	5-7
			TEST 1			
Demo	33.75	37.94	41.41	4.19	3.47	7.66
National	47.43	50.31	51.35	2.88	1.04	3.92
			TEST 2			
Demo	31.04	35.73	42.17	4.69	6.44	11.13
National	40.22	43.10	47.56	2.88	4.46	7.34
			TEST 3			
Demo	20.70	24.10	25.87	3.40	1.77	5.17
National	23.09	27.17	32.57	4.08	5.40	9.48
			THREE TEST TOTAL			
Demo	85.49	97.77	109.45	12.28	11.68	23.96
National	110.74	120.58	131.48	9.84	10.90	20.74

Table 3

5th and 6th grade scores of MAT tests 1 and 2 from 5 schools compared with National Norms and 5th and 6th grade scores at the demonstration school.

GRADE	NATIONAL NORM	DEMO SCHOOL	5 OTHER SCHOOLS	t	
		BOTH TESTS			
5th	87.65	76.20	73.97	1.76	
6th	93.41	83.32	74.82	2.90	$p < .01$
		TESTS 1			
5th	47.43	38.35	39.46	.86	
6th	50.31	42.43	39.53	2.25	$p < .05$
		TESTS 2			
5th	40.22	37.85	34.51	2.04	$p < .05$
6th	43.10	40.89	35.29	3.41	$p < .01$

Table 4

Means and correlations for Music Behavioral Expectations Guide List test and the Music Achievement Test.

			MBEGL Test			
			Written		Performance	
Grade	N	MAT	Mean	r	Mean	r
3	31	71.81	16.35	.02	23.75	.56
4	31	108.44	13.48	.61	20.71	.45
5	27	113.12	28.41	.69	17.14	.54
6	26	100.53	29.69	.63	43.41	.68

Table 5

Percentage of each Response by teachers to questionnaire administered at the Ella Jenkins Concert.

(1) How would you rate the advance publicity of Ella Jenkins' tour?

Excellent	53.0
Good	37.8
Undecided	1.3
Fair	1.8
Poor	
N.A.	6.4

(2) How much did you use the advance materials to prepare the children?

Very much	43.1
Some	39.8
Little	3.6
Did not use	1.6
Did not receive	3.1

(3) How do you feel your students anticipated the coming of Ella Jenkins' concert?

Very excited	63.1
Mildly excited	27.9
Indifferent	1.1
Negative	
N.A.	8.1

(4) How did <u>you</u> anticipate the coming of the concert?

Very excited	51.2
Mildly excited	39.0
Indifferent	.8
Negative	
N.A.	9.2

(5) Do you feel that you increased your musical concepts and skills as a result of the concert?

Definitely yes	28.9
Yes	54.2
Undecided	5.6
No	4.1
Definitely no	
N.A.	7.1

(6) Do you think the students increased their musical concepts and skills as a result of the concert?

Definitely yes	36.7
Yes	48.4
Undecided	5.9
No	.8
Definitely no	
N.A.	8.4

(7) Do you feel that schools should provide programs of this type for its students?

Strongly agree	59.3
Agree	31.7
Undecided	1.8
Disagree	
N.A.	7.4

Table 6

Percentage of each Response by adult visitors to a questionnaire administered at the Ella Jenkins Concert.

(1) How would you rate your enjoyment of the program?

Excellent	75.2
Good	20.6
Undecided	.8
Fair	1.0
Poor	0
N.A.	2.3

(2) How do you think the children would rate the program?

Excellent	79.0
Good	18.6
Undecided	.5
Fair	.3
Poor	0
N.A.	1.8

(3) How would you rate Ella Jenkins' technique with children?

Excellent	79.5
Good	17.3
Undecided	.5
Fair	.8
Poor	0
N.A.	2.0

(4) Did you personally participate in the program with Ella Jenkins?

Throughout	69.0
Occasionally	24.9
Not at all	3.5
N.A.	2.8

(5) Do you feel that the Ella Jenkins tour gives constructive publicity to the IEMI project?

Definitely	61.9
Yes	32.9
Undecided	2.5
No	.3
Definitely not	0
N.A.	2.5

Table 7

Percent of each response for Music Time questionnaire.

1. ...receive Music Time for September?

Yes	76.8%
No	10.6%
No answer	12.6%

...for October?

Yes	82.3%
No	3.9%
No answer	13.8%

2. ...used ...suggestions with children?

Much	9.4%
Some	54.7%
A little	20.1%
Not at all	13.0%
No answer	2.8%

3. ...children enjoy....?

Very much	24.0%
Much	36.2%
Neutral	19.3%
Little	5.9%
Not at all	3.5%
No answer	11.1%

4. ...level of musical knowledge...?

Very low	.8%
Low	5.9%
About right	71.3%
High	5.5%
Too high	3.1%
No answer	14.6%

5. ...amount of material ...?

Too little	14.6%
About right	70.9%
Too much	3.5%
No answer	14.5%

6. ...use more material ...?

Yes	62.2%
No	21.3%
No answer	16.5%

7. ...keep a record...?

Yes	12.6%
No	72.4%
No answer	15.0%